

Amdt. dated April 11, 2006
Reply to Office action of January 11, 2006

Serial No. 10/003,952
Docket No. SVL920010017US1
Firm No. 0054.0018

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-4. (Canceled)

5. (Original) A method for performing an impact analysis of program statements in a source code file that is one of a plurality of source code files, wherein each program statement has at least one of an input parameter and output parameter, comprising:

receiving selection of at least one program statement in one source code file; and
for each selected program statement, determining program statements throughout the source code files having as one input parameter one program artifact that is affected by the selected program statement.

6. (Original) The method of claim 5, wherein the source code files including the program artifacts affected by the selected program statement comprise components of an application program.

7. (Original) The method of claim 5, wherein determining the program statements having as one input parameter one program artifact affected by the selected program statement further comprises:

determining program statements in the source code files having as one input parameter the program artifact that is one output parameter to the selected program statement.

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8. (Original) The method of claim 7, wherein determining the program statements having as one input parameter one program artifact affected by the selected program statement further comprises:

for each previously determined program statement having as one input parameter one program artifact affected by the selected program statement, performing the steps of:

- (i) determining the output parameter program artifact of the statement; and
- (ii) determining program statements in the source code files having as one input parameter the program artifact that is the output parameter of the previously determined statement.

9. (Original) The method of claim 8, wherein determining the program statements having as one input parameter one program artifact affected by the selected program statement further comprises:

for each previously determined program statement having as one input parameter one program artifact that is the output parameter of one previously determined program statement having as one input parameter one program statement affected directly or indirectly by the selected source program statement, performing the steps of :

(i) determining the output parameter program artifact of the determined program statement;

(ii) determining program statements in the source code files having as one input parameter the program artifact that is the output parameter of the determined program statement; and

performing recursively the determination of program statements having as one input parameter one program artifact that is the output parameter of one previously determined program statement having as one input parameter one program statement affected directly or indirectly by the selected source statement.

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10. (Original) The method of claim 5, further comprising:
outputting information on determined program statements and program artifacts affected
by each selected program statement.

11. (Original) The method of claim 5, wherein the program artifact comprises a variable,
Input/Output buffer or file.

12. (Original) The method of claim 5, wherein one program statement has one input
parameter that is affected by the selected program statement if the output parameter program
artifact of the selected program statement is the input parameter program artifact to the program
statement.

13. (Original) The method of claim 12, wherein one statement further has one input
parameter that is affected by the selected program statement if the output parameter program
artifact of the selected program statement is the input parameter program artifact to the program
statement or if the output parameter program artifact of one statement other than the selected
program statement has as one input parameter one program artifact affected by the selected
program statement.

14. (Original) The method of claim 5, wherein if the selected program statement
comprises a call to a program routine comprised of a plurality of statements in one of the source
code files, then one statement has one input parameter that is affected by the selected program
statement if:

the output parameter program artifact of the selected source code statement is the input
parameter program artifact to the statement; or

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the input parameter of the selected source code statement is the input parameter program artifact to the statement.

15. (Original) The method of claim 5, further comprising:
accessing the source code files from a control management system.

16-24. (Canceled)

25. (Original) A system for performing an impact analysis of program statements in a source code file that is one of a plurality of source code files, wherein each program statement has at least one of an input parameter and output parameter, comprising:

means for receiving selection of at least one program statement in one source code file;
and

means for determining, for each selected program statement, program statements throughout the source code files having as one input parameter one program artifact that is affected by the selected program statement.

26. (Original) The system of claim 25, wherein the source code files including the program artifacts affected by the selected program statement comprise components of an application program.

27. (Original) The system of claim 25, wherein the means for determining the program statements having as one input parameter one program artifact affected by the selected program statement further performs:

determining program statements in the source code files having as one input parameter the program artifact that is one output parameter to the selected program statement.

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28. (Original) The system of claim 27, wherein the means for determining the program statements having as one input parameter one program artifact affected by the selected program statement further performs for each previously determined program statement having as one input parameter one program artifact affected by the selected program statement:

determining the output parameter program artifact of the statement; and

determining program statements in the source code files having as one input parameter the program artifact that is the output parameter of the previously determined statement.

29. (Original) The system of claim 28, wherein the means for determining the program statements having as one input parameter one program artifact affected by the selected program statement further performs for each previously determined program statement having as one input parameter one program artifact that is the output parameter of one previously determined program statement having as one input parameter one program statement affected directly or indirectly by the selected source program statement:

determining the output parameter program artifact of the determined program statement;

determining program statements in the source code files having as one input parameter the program artifact that is the output parameter of the determined program statement; and

performing recursively the determination of program statements having as one input parameter one program artifact that is the output parameter of one previously determined program statement having as one input parameter one program statement affected directly or indirectly by the selected source statement.

30. (Original) The system of claim 25, further comprising:

means for outputting information on determined program statements and program artifacts affected by each selected program statement.

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31. (Original) The system of claim 25, wherein the program artifact comprises a variable, Input/Output buffer or file.

32. (Original) The system of claim 25, wherein one program statement has one input parameter that is affected by the selected program statement if the output parameter program artifact of the selected program statement is the input parameter program artifact to the program statement.

33. (Original) The system of claim 32, wherein one statement further has one input parameter that is affected by the selected program statement if the output parameter program artifact of the selected program statement is the input parameter program artifact to the program statement or if the output parameter program artifact of one statement other than the selected program statement has as one input parameter one program artifact affected by the selected program statement.

34. (Original) The system of claim 25, wherein if the selected program statement comprises a call to a program routine comprised of a plurality of statements in one of the source code files, then one statement has one input parameter that is affected by the selected program statement if:

the output parameter program artifact of the selected source code statement is the input parameter program artifact to the statement; or

the input parameter of the selected source code statement is the input parameter program artifact to the statement.

35. (Original) The system of claim 25, further comprising:

means for accessing the source code files from a control management system.

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36-44. (Canceled)

45. (Original) An article of manufacture including code for performing an impact analysis of program statements in a source code file that is one of a plurality of source code files, wherein each program statement has at least one of an input parameter and output parameter, by:
receiving selection of at least one program statement in one source code file; and
for each selected program statement, determining program statements throughout the source code files having as one input parameter one program artifact that is affected by the selected program statement.

46. (Original) The article of manufacture of claim 45, wherein the source code files including the program artifacts affected by the selected program statement comprise components of an application program.

47. (Original) The article of manufacture of claim 45, wherein determining the program statements having as one input parameter one program artifact affected by the selected program statement further comprises:

determining program statements in the source code files having as one input parameter the program artifact that is one output parameter to the selected program statement.

48. (Currently amended) The article of manufacture of claim 47, wherein determining the program statements having as one input parameter one program artifact affected by the selected program statement further comprises:

for each previously determined program statement having as one input parameter one program artifact affected by the selected program statement, performing the steps of:

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(([[I]])i) determining the output parameter program artifact of the statement; and
(ii) determining program statements in the source code files having as one input parameter the program artifact that is the output parameter of the previously determined statement.

49. (Currently amended) The article of manufacture of claim 48, wherein determining the program statements having as one input parameter one program artifact affected by the selected program statement further comprises:

for each previously determined program statement having as one input parameter one program artifact that is the output parameter of one previously determined program statement having as one input parameter one program statement affected directly or indirectly by the selected source program statement, performing the steps of:

(([[I]])i) determining the output parameter program artifact of the determined program statement;

(ii) determining all program statements in the source code files having as one input parameter the program artifact that is the output parameter of the determined program statement; and

performing recursively the determination of program statements having as one input parameter one program artifact that is the output parameter of one previously determined program statement having as one input parameter one program statement affected directly or indirectly by the selected source statement.

50. (Original) The article of manufacture of claim 45, further comprising:
outputting information on determined program statements and program artifacts affected by each selected program statement.

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51. (Original) The article of manufacture of claim 45, wherein the program artifact comprises a variable, Input/Output buffer or file.

52. (Original) The article of manufacture of claim 45, wherein one program statement has one input parameter that is affected by the selected program statement if the output parameter program artifact of the selected program statement is the input parameter program artifact to the program statement.

53. (Original) The article of manufacture of claim 52, wherein one statement further has one input parameter that is affected by the selected program statement if the output parameter program artifact of the selected program statement is the input parameter program artifact to the program statement or if the output parameter program artifact of one statement other than the selected program statement has as one input parameter one program artifact affected by the selected program statement.

54. (Original) The article of manufacture of claim 45, wherein if the selected program statement comprises a call to a program routine comprised of a plurality of statements in one of the source code files, then one statement has one input parameter that is affected by the selected program statement if:

the output parameter program artifact of the selected source code statement is the input parameter program artifact to the statement; or

the input parameter of the selected source code statement is the input parameter program artifact to the statement.

55. (Original) The article of manufacture of claim 45, further comprising:
accessing the source code files from a control management system.

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56-60. (Canceled)

61. (Currently amended) The method of claim 5, further comprising:
~~generating information on each program artifact referenced as an output parameter in the~~
~~at least one program statement.~~
performing recursively the determination of program statements throughout the source
code files.

62. (Currently amended) The method of claim 61, wherein ~~the source code files comprise~~
~~components of an application program; the program statements have as one input parameter one~~
program artifact that is the output parameter of one previously determined program statement.

63. (Currently amended) ~~The method of claim 61, further comprising:~~
~~associating each program artifact with a program statement referencing the program~~
~~artifact as one input or output parameter and information indicating whether the program~~
~~statement references the program artifact as input or output. The method of claim 62, wherein~~
the one previously determined program statement has as one input parameter one program
statement affected directly or indirectly by the selected source program statement.

64. (Currently amended) ~~The method of claim 61, wherein the program artifact~~
~~comprises a variable, input/output buffer or file. The method of claim 63, further comprising:~~
generating information on each program artifact referenced as an output parameter in at
least one program statement.

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65. (Currently amended) ~~The method of claim 5, further comprising:
determining program statements in the source code file having as one input parameter one
program artifact that is affected by the selected program statement.~~

The method of claim 64, further comprising:
determining program statements in the source code file having as one input parameter one
program artifact that is affected by the selected source program statement.

66. (Currently amended) ~~The method of claim 65, wherein the program artifact
comprises a variable, Input/Output buffer or file.~~

The method of claim 63, further comprising:
determining program statements in the source code file having as one input parameter one
program artifact that is affected by the selected source program statement.

67. (Currently amended) ~~The method of claim 65, wherein one program statement
has one input parameter that is affected by the selected program statement if an output parameter
program artifact of the selected program statement is the input parameter program artifact to the
program statement.~~

The method of claim 62, wherein the one previously determined program statement has
as one input parameter one program statement affected directly by the selected source program
statement.

68. (Currently amended) ~~The method of claim 67, wherein one program statement
further has one input parameter that is affected by the selected program statement if the output
parameter program artifact of the selected program statement is the input parameter program~~

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~~artifact to the program statement or if the output parameter program artifact of one statement other than the selected program statement has as one input parameter one program artifact affected by the selected program statement.~~

The method of claim 5, wherein recursive calls are made during impact analysis to an impact analysis routine.

69. (Currently amended) ~~The method of claim 65, wherein selection of a plurality of program statements are received:~~

The method of claim 68, wherein the recursive calls are made for determining the program statements throughout the source code files having as one input parameter one program artifact that is affected by the selected source program statement.

70. (Currently amended) The system of claim 25, further comprising:
~~means for generating information on each program artifact referenced as an output parameter in the at least one program statement:~~

means for performing recursively the determination of program statements throughout the source code files.

71. (Currently amended) The system of claim 70, wherein ~~the source code files comprise components of an application program: the program statements have as one input parameter one program artifact that is the output parameter of one previously determined program statement.~~

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72. (Currently amended) ~~The system of claim 70, further comprising:~~
~~means for associating each program artifact with a program statement referencing the~~
~~program artifact as one input or output parameter and information indicating whether the~~
~~program statement references the program artifact as input or output.~~

The system of claim 71, wherein the one previously determined program statement has as
one input parameter one program statement affected directly or indirectly by the selected source
program statement.

73. (Currently amended) ~~The system of claim 70, wherein the program artifact~~
~~comprises a variable, Input/Output buffer or file:~~

The system of claim 72, further comprising:
means for generating information on each program artifact referenced as an output
parameter in at least one program statement

74. (Currently amended) ~~The system of claim 25, further comprising:~~
~~means for determining program statements in the source code file having as one input~~
~~parameter one program artifact that is affected by the selected program statement.~~

The system of claim 73, further comprising:
means for determining program statements in the source code file having as one input
parameter one program artifact that is affected by the selected source program statement.

75. (Currently amended) ~~The system of claim 74, wherein the program artifact~~
~~comprises a variable, Input/Output buffer or file:~~

The system of claim 72, further comprising:
means for determining program statements in the source code file having as one input
parameter one program artifact that is affected by the selected source program statement.

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76. (Currently amended) ~~The system of claim 74, wherein one program statement has one input parameter that is affected by the selected program statement if an output parameter program artifact of the selected program statement is the input parameter program artifact to the program statement.~~

The system of claim 71, wherein the one previously determined program statement has as one input parameter one program statement affected directly by the selected source program statement.

77. (Currently amended) ~~The system of claim 76, wherein one program statement further has one input parameter that is affected by the selected program statement if the output parameter program artifact of the selected program statement is the input parameter program artifact to the program statement or if the output parameter program artifact of one statement other than the selected program statement has as one input parameter one program artifact affected by the selected program statement.~~

The system of claim 25, wherein recursive calls are made during impact analysis to an impact analysis routine

78. (Currently amended) ~~The system of claim 74, wherein selection of a plurality of program statements are received.~~

The system of claim 77, wherein the recursive calls are made for determining the program statements throughout the source code files having as one input parameter one program artifact that is affected by the selected source program statement.

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79. (Currently amended) The article of manufacture of claim 45, wherein the code further performs[[:]]

~~generating information on each program artifact referenced as an output parameter in the at least one program statement:~~

recursive determination of program statements throughout the source code files.

80. (Currently amended) The article of manufacture of claim 79, wherein ~~the source code files comprise components of an application program:~~

the program statements have as one input parameter one program artifact that is the output parameter of one previously determined program statement.

81. (Currently amended) ~~The article of manufacture of claim 79, further comprising: associating each program artifact with a program statement referencing the program artifact as one input or output parameter and information indicating whether the program statement references the program artifact as input or output:~~

The article of manufacture of of claim 80, wherein the one previously determined program statement has as one input parameter one program statement affected directly or indirectly by the selected source program statement.

82. (Currently amended) ~~The article of manufacture of claim 79, wherein the program artifact comprises a variable, Input/Output buffer or file:~~

The article of manufacture of claim 81, wherein the code further performs:
generating information on each program artifact referenced as an output parameter in at least one program statement.

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83. (Currently amended) ~~The article of manufacture of claim 45, wherein the code further performs:~~

~~determining program statements in the source code file having as one input parameter one program artifact that is affected by the selected program statement.~~

The method of claim 82, wherein the code further performs:

determining program statements in the source code file having as one input parameter one program artifact that is affected by the selected source program statement.

84. (Currently amended) ~~The article of manufacture of claim 83, wherein the program artifact comprises a variable, Input/Output buffer or file.~~

The article of manufacture of claim 81, wherein the code further performs:

determining program statements in the source code file having as one input parameter one program artifact that is affected by the selected source program statement.

85. (Currently amended) ~~The article of manufacture of claim 83, wherein one program statement has one input parameter that is affected by the selected program statement if an output parameter program artifact of the selected program statement is the input parameter program artifact to the program statement.~~

The article of manufacture of claim 80, wherein the one previously determined program statement has as one input parameter one program statement affected directly by the selected source program statement.

86. (Currently amended) ~~The article of manufacture of claim 85, wherein one program statement further has one input parameter that is affected by the selected program statement if the output parameter program artifact of the selected program statement is the input parameter program artifact to the program statement or if the output parameter program artifact~~

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~~of one statement other than the selected program statement has as one input parameter one
program artifact affected by the selected program statement.~~

The article of manufacture of claim 45, wherein recursive calls are made during impact
analysis to an impact analysis routine.

87. (Currently amended) ~~The article of manufacture of claim 83, wherein selection
of a plurality of program statements are received.~~

The article of manufacture of claim 86, wherein the recursive calls are made for
determining the program statements throughout the source code files having as one input
parameter one program artifact that is affected by the selected source program statement.